WHAT IS CLAIMED IS:

1. Method for estimating the degradation of the trapping capacity of a NOx-Trap catalytic converter, which method provides for performing a first NO_x regeneration process of a predetermined duration, determining whether the actual duration of the first NO_x regeneration process is equal to the predetermined duration and assuming that the trapping capacity is unchanged if the actual duration of the first NO_x regeneration process is equal to the predetermined duration; the method being characterised in that, if the actual duration of the first NO_x regeneration process is less than the predetermined duration, at least one corrective action is performed in order to attempt to counteract the degeneration of the NOx-Trap catalytic converter, a subsequent NO_x regeneration process is performed, it is determined whether the actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, if the actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, then new characteristic operating parameters for the corrective action are used for the subsequent life of the NOx-Trap catalytic converter whereas, if the actual duration of the subsequent NO_x regeneration process is less than the predetermined duration, the estimated trapping capacity (C) of the NOx-Trap catalytic converter is reduced.

2. Method according to Claim 1, in which the signal of an ON/OFF type lambda sensor arranged upstream from the NOx-Trap catalytic converter is used to determine whether the actual duration of a NO_x regeneration process is equal to the predetermined duration.

3. Method according to Claim 2, in which, if no transition in the signal from the lambda sensor is detected during the NO_x regeneration process, then it is assumed that the actual duration of the NO_x regeneration process is equal to the predetermined duration whereas, if a transition in the signal from the lambda sensor is detected during the NO_x regeneration process, then it is assumed that the actual duration of the NO_x regeneration process is less than the predetermined duration.

4. Method according to Claim 1, in which the corrective action provides for increasing the operating temperature of the NOx-Trap catalytic converter; if the actual duration of the subsequent NO_x regeneration process is equal to the

predetermined duration, then the minimum value of the operating temperature of said NOx-Trap catalytic converter is increased for the subsequent life of the NOx-Trap catalytic converter.

5. Method according to Claim 4, in which the minimum value of the operating temperature of the NOx-Trap catalytic converter is not increased beyond a respective predetermined threshold value.

6. Method according to Claim 4, in which the operating temperature of the NOx-Trap catalytic converter is increased by means of a number of successive increments of a determined size; after each increment, the performance of a subsequent NO_x regeneration process is awaited and, if the actual duration of the subsequent NO_x regeneration process is less than the predetermined duration, then a further increment is performed whereas, if the actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, then incrementation of the operating temperature of the NOx-Trap catalytic converter is ceased and the minimum value of the operating temperature of said NOx-Trap catalytic converter is increased.

7. Method according to Claim 6, in which the value of the operating temperature of the NOx-Trap catalytic converter is not increased beyond a respective predetermined threshold value.

8. Method according to Claim 1, in which the corrective action provides for performing an unscheduled desulfation process and, on completion of the unscheduled desulfation process, awaiting performance of a subsequent NO_x regeneration process; if the actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, then the temperature value of the NOx-Trap catalytic converter is incremented and the average value for ratio used during future desulfation processes is decremented.

9. Method according to Claim 8, in which the temperature value of the NOx-Trap catalytic converter and the average value for ratio used during the desulfation processes are not modified beyond respective predetermined threshold values.

10. Method according to Claim 1, in which the corrective action provides for increasing the operating temperature of the NOx-Trap catalytic converter; if the

actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, then the minimum value of the operating temperature of said NOx-Trap catalytic converter is increased for the subsequent life of the NOx-Trap catalytic converter; if the actual duration of the subsequent NO_x regeneration process is less than the predetermined duration, then an unscheduled desulfation process is performed and, on completion of the unscheduled desulfation process, performance of a subsequent NO_x regeneration process is awaited; if the actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, then the temperature value of the NOx-Trap catalytic converter is incremented and the average value for ratio used during future desulfation processes is decremented; if the actual duration of the subsequent NO_x regeneration process is less than the predetermined duration, then the estimated trapping capacity of the NOx-Trap catalytic converter is reduced.

11. Method according to Claim 10, in which the operating temperature of the NOx-Trap catalytic converter is increased by means of a number of successive increments of a determined size; after each increment, the performance of a subsequent NO_x regeneration process is awaited and, if the actual duration of the subsequent NO_x regeneration process is less than the predetermined duration, then a further increment is performed whereas, if the actual duration of the subsequent NO_x regeneration process is equal to the predetermined duration, then incrementation of the operating temperature of the NOx-Trap catalytic converter is ceased and the minimum value of the operating temperature of the NOx-Trap catalytic converter is increased.

12. Method according to Claim 11, in which the value of the operating temperature of the NOx-Trap catalytic converter is not increased beyond a respective predetermined threshold value.

13. Method according to Claim 1, in which the predicted value for the duration of the NO_x regeneration process is calculated using a storage model of the NOx-Trap catalytic converter, said model being based on an estimate of the trapping capacity of the NOx-Trap catalytic converter, such that the NO_x regeneration process only lasts for the time that is strictly necessary to remove the NO_x groups trapped in the NOx-Trap catalytic converter.